



SPEC® OMPG2012 Result

Copyright 2012-2023 Standard Performance Evaluation Corporation

Cisco Systems

SPECompG_peak2012 = Not Run

Cisco UCS X410c M7 (Intel Xeon Platinum 8490H)

SPECompG_base2012 = 84.4

OMP2012 license:023

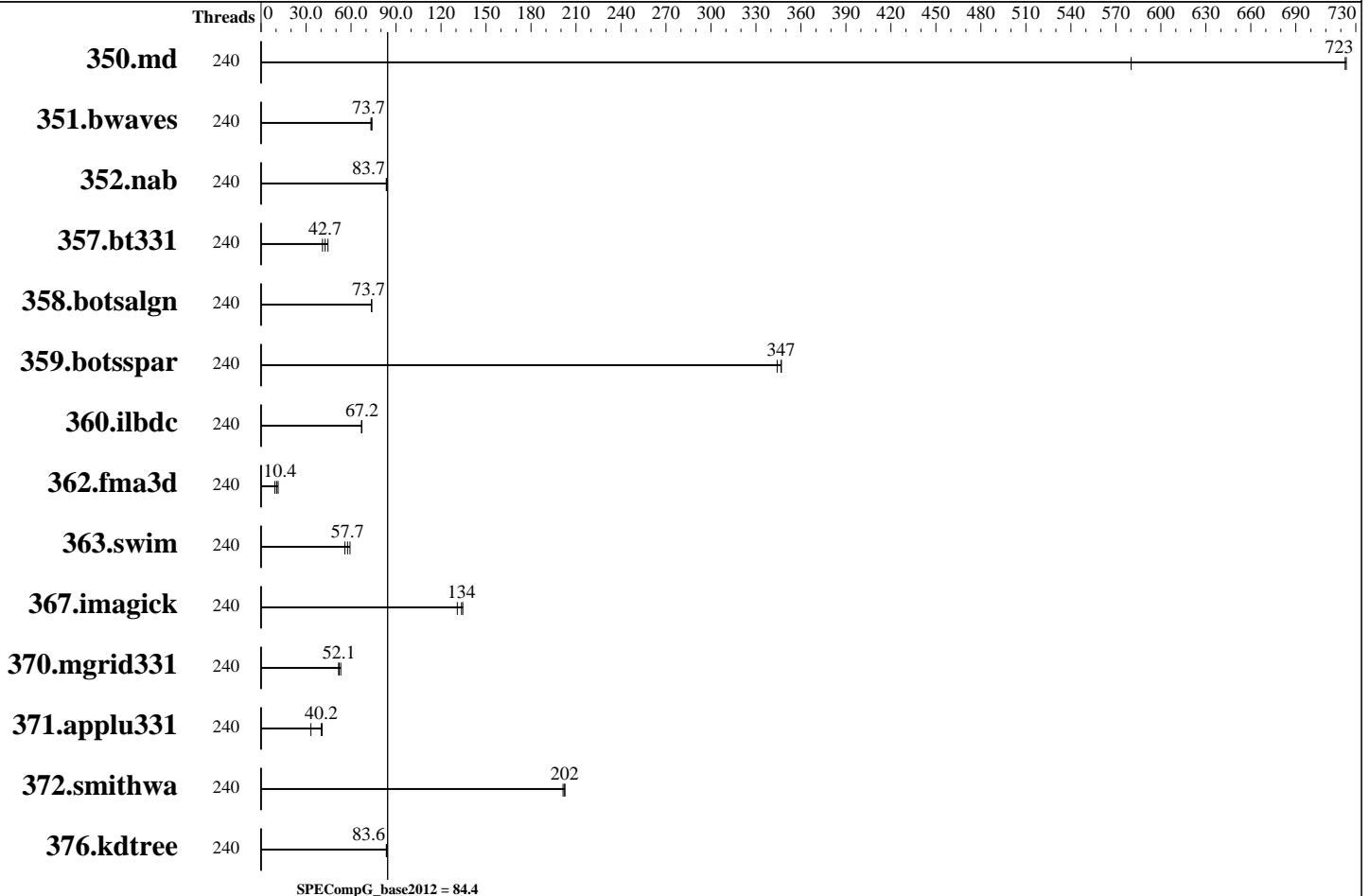
Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: May-2023

Hardware Availability: May-2023

Software Availability: Mar-2023



Hardware

CPU Name: Intel Xeon Platinum 8490H
 CPU Characteristics: Intel Turbo Boost Technology up to 3.5 GHz
 CPU MHz: 1900
 CPU MHz Maximum: 3500
 FPU: Integrated
 CPU(s) enabled: 240 cores, 4 chips, 60 cores/chip
 CPU(s) orderable: 1,2,3,4 Chips
 Primary Cache: 32 KB I + 48 KB D on chip per core
 Secondary Cache: 2 MB I+D on chip per core
 L3 Cache: 112.5 MB I+D on chip per chip
 Other Cache: None
 Memory: 2 TB (32 x 64 GB 2Rx4 PC5-4800B-R)
 Disk Subsystem: 1 x 960 GB M.2 SSD
 Other Hardware: None
 Base Threads Run: 240
 Minimum Peak Threads: --

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 15 SP4 5.14.21-150400.22-default
 Compiler: C/C++/Fortran: Version 2023.1.0.20230320 of Intel oneAPI DPC++/C++
 Auto Parallel: Yes
 File System: xfs
 System State: Multi-user, run level 3
 Base Pointers: 64-bit
 Peak Pointers: Not Applicable
 Other Software: None



SPEC OMPG2012 Result

Copyright 2012-2023 Standard Performance Evaluation Corporation

Cisco Systems

SPECompG_peak2012 = Not Run

Cisco UCS X410c M7 (Intel Xeon Platinum 8490H)

SPECompG_base2012 = 84.4

OMP2012 license:023

Test date: May-2023

Test sponsor: Cisco Systems

Hardware Availability: May-2023

Tested by: Cisco Systems

Software Availability: Mar-2023

Maximum Peak Threads: --

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
350.md	240	6.40	724	<u>6.40</u>	<u>723</u>	7.98	580							
351.bwaves	240	61.8	73.3	<u>61.5</u>	<u>73.7</u>	61.3	73.9							
352.nab	240	<u>46.5</u>	<u>83.7</u>	46.6	83.5	46.5	83.7							
357.bt331	240	<u>111</u>	<u>42.7</u>	116	41.0	106	44.6							
358.botsalgn	240	59.0	73.7	59.0	73.7	<u>59.0</u>	<u>73.7</u>							
359.botsspar	240	<u>15.1</u>	<u>347</u>	15.1	347	15.3	344							
360.ilbdc	240	52.9	67.3	<u>52.9</u>	<u>67.2</u>	53.2	66.9							
362.fma3d	240	<u>365</u>	<u>10.4</u>	411	9.24	333	11.4							
363.swim	240	76.4	59.3	81.0	55.9	<u>78.6</u>	<u>57.7</u>							
367.imagick	240	52.3	135	<u>52.6</u>	<u>134</u>	53.7	131							
370.mgrid331	240	83.2	53.1	85.5	51.7	<u>84.9</u>	<u>52.1</u>							
371.applu331	240	149	40.7	182	33.2	<u>151</u>	<u>40.2</u>							
372.smithwa	240	26.6	201	26.5	203	<u>26.5</u>	<u>202</u>							
376.kdtree	240	<u>53.8</u>	<u>83.6</u>	53.9	83.5	53.8	83.6							

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Platform Notes

```

Sysinfo program /home/omp2012/Docs/sysinfo
Revision 563 of 2016-06-10 (097295389cf6073d8c3b03fa376740a5)
running on localhost Fri May 12 11:30:37 2023

```

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
<http://www.spec.org/omp2012/Docs/config.html#sysinfo>

From /proc/cpuinfo

```

model name : Intel(R) Xeon(R) Platinum 8490H
 4 "physical id"s (chips)
 240 "processors"

```

cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

```

cpu cores : 60
siblings  : 60
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46
47 48 49 50 51 52 53 54 55 56 57 58 59
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46
47 48 49 50 51 52 53 54 55 56 57 58 59

```

Continued on next page



SPEC OMPG2012 Result

Copyright 2012-2023 Standard Performance Evaluation Corporation

Cisco Systems

SPECompG_peak2012 = Not Run

Cisco UCS X410c M7 (Intel Xeon Platinum 8490H)

SPECompG_base2012 = 84.4

OMP2012 license:023

Test date: May-2023

Test sponsor: Cisco Systems

Hardware Availability: May-2023

Tested by: Cisco Systems

Software Availability: Mar-2023

Platform Notes (Continued)

```

physical 2: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46
47 48 49 50 51 52 53 54 55 56 57 58 59
physical 3: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46
47 48 49 50 51 52 53 54 55 56 57 58 59
cache size : 115200 KB

```

From /proc/meminfo

```

MemTotal:      2113421080 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

From /etc/*release* /etc/*version*

```

os-release:
NAME="SLES"
VERSION="15-SP4"
VERSION_ID="15.4"
PRETTY_NAME="SUSE Linux Enterprise Server 15 SP4"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15:sp4"

```

uname -a:

```

Linux localhost 5.14.21-150400.22-default #1 SMP PREEMPT_DYNAMIC Wed May 11
06:57:18 UTC 2022 (49db222) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 May 12 02:08

SPEC is set to: /home/omp2012

```

Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda2        btrfs    222G      102G  119G   47% /home

```

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Cisco Systems, Inc. X410M7.5.1.1b.10.0424230829 04/24/2023

Memory:

```

14x 0xAD00 HMC94MEBRA109N 64 GB 2 rank 4800 MT/s
2x 0xAD00 HMC94MEBRA121N 64 GB 2 rank 4800 MT/s
16x 0xAD00 HMC94MEBRA123N 64 GB 2 rank 4800 MT/s

```

(End of data from sysinfo program)



SPEC OMPG2012 Result

Copyright 2012-2023 Standard Performance Evaluation Corporation

Cisco Systems

SPECompG_peak2012 = Not Run

Cisco UCS X410c M7 (Intel Xeon Platinum 8490H)

SPECompG_base2012 = 84.4

OMP2012 license:023

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: May-2023

Hardware Availability: May-2023

Software Availability: Mar-2023

General Notes

BIOS Setting:

```

Intel Hyper-Threading Technology set to Disabled
Sub NUMA Clustering set to Disabled
Processor C6 Report set to Enabled
ADDDC Sparing set to Disabled
UPI Link Power Management Enabled
UPI Link Speed 16.0GT/S

```

General OMP Library Settings:

```

ENV_KMP_LIBRARY = turnaround
ENV_KMP_BLOCKTIME = infinite
ENV_OMP_STACKSIZE = 292M
ENV_KMP_SCHEDULE = static
ENV_OMP_THREADS = 240
ENV_OMP_DYNAMIC = FALSE

```

NA: The test sponsor attests, as of date of publication, the CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

Yes: The test sponsor attests, as of date of publication, the CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Spectre variant 2) is mitigated in the system as tested and documented.

OS tuning:

```

Stack size set to unlimited using "ulimit -s unlimited"
Transparent Huge Pages enabled by default

```

Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifort

Base Portability Flags

```

350.md: -FR
357.bt331: -mcmodel=medium

```

Continued on next page



SPEC OMPG2012 Result

Copyright 2012-2023 Standard Performance Evaluation Corporation

Cisco Systems

SPECompG_peak2012 = Not Run

Cisco UCS X410c M7 (Intel Xeon Platinum 8490H)

SPECompG_base2012 = 84.4

OMP2012 license:023

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: May-2023

Hardware Availability: May-2023

Software Availability: Mar-2023

Base Portability Flags (Continued)

363.swim: -mcmmodel=medium
367.imagick: -std=c99

Base Optimization Flags

C benchmarks:

-O3 -qopenmp -xsapphirerapids -qopt-zmm-usage=high -fp-model fast=2
-fno-alias -ipo -Wno-implicit-function-declaration
-L/home/omp2012/je5.0.1-64 -Wl, --rpath=/home/omp2012/je5.0.1-64
-ljemalloc

C++ benchmarks:

-O3 -qopenmp -xsapphirerapids -qopt-zmm-usage=high -fp-model fast=2
-fno-alias -ipo -Wno-implicit-function-declaration
-L/home/omp2012/je5.0.1-64 -Wl, --rpath=/home/omp2012/je5.0.1-64
-ljemalloc

Fortran benchmarks:

-O3 -qopenmp -xsapphirerapids -qopt-zmm-usage=high -fp-model fast=2
-fno-alias -ipo -Wno-implicit-function-declaration -align all
-L/home/omp2012/je5.0.1-64 -Wl, --rpath=/home/omp2012/je5.0.1-64
-ljemalloc

The flags file that was used to format this result can be browsed at

<http://www.spec.org/omp2012/flags/Intel-ic2023-official-linux64.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/omp2012/flags/Intel-ic2023-official-linux64.xml>

SPEC is a registered trademark of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC OMP2012 v1.1.
Report generated on Wed May 31 14:14:28 2023 by SPEC OMP2012 PS/PDF formatter v541.
Originally published on 31 May 2023.